5. And stimulation also of all parts of the cervical sympathetic where it unites with the cranial nerves, especially with the trigeminal.

6. The comparison of the results obtained by stimulation of the sympathetic and of the trigeminal show that the latter nerve receives the greater part of its dilator fibres from the sympathetic.

These nerves may be stimulated by other means more physiological than electricity.

7. The blood in asphyxia stimulates both classes of vaso-motor nerves to activity; but the congestion, the index of the vaso-motor reaction, of the bucco-facial region is less marked on the side on which the sympathetic track has been divided.

These nerves may be stimulated either directly or, as is most usual, reflexly by an irritation coming from the periphery.

The following experiments show the regions in which these different nerves arise:—

1. Stimulation of the vagus nerve in the inferior cervical region produces a bilateral dilatation.

2. The vaso-dilatation ceases or diminishes considerably on the side on which the sympathetic is divided.

3. Vaso-dilatation does not appear on both sides if the animal is deeply chloroformed, or if the cervical spinal cord has been divided at any point.

4. The vaso-dilatation is very marked when the superior laryngeal nerve or the vagus is excited at the origin of its pulmonary branches. When points lower than these are excited no dilatation follows, even if the cardiac nerves are stimulated.

Hence the visceral sensitive nerves which govern this reflex come from the organs of respiration.

5. Excitation of the central end of the sciatic nerve also produces this congestion; stimulation of the tibial nerve, and probably of all the cutaneous nerves, has the same result.

6. After section of the cervical sympathetic trunk, reflex or asphyetic stimulation of this centre can still produce a certain degree of dilatation. When the section has been made sufficiently long to allow of the degeneration of its fibres, stimulation of the superior maxillary nerve can still produce a slight dilatation of the vessel in the lip of the same side. Hence, all the vaso-dilators of this region are not contained in the cervical sympathetic.—*Rev. Scientifique*, Aug. 5, 1882.

Normal and Pathological Sleep.

Emile Lung gives the following *résumé* of the propositions established in an elaborate memoir of the above subject.

1. We are only conscious of the phenomena of the exterior world in which we live by the intermediation of our organs of sense which receive and transmit impressions to our consciences, of which the seat is in the brain, the organ of our physical life.

2. In addition to the phenomena of consciousness all sensations are reducible to vibratory movements, which are transmitted one after the other through the nerves to the nerve centres in the brain and spinal cord.

3. The sensitive impressions which are transmitted to the spinal cord are not appreciated by our consciences; they are capable of producing movement in different parts of our bodies, but these movements are effected unconsciously without any effort of will. In physiology they are termed reflex movements.

4. Just as a real sensation can exist without affecting our consciousness, so in certain cases we can be conscious of sensations which have no external reality.

These sensations which are not evoked by an external object are termed hallucinations, and in persons with diseased judgment are interpreted as realities.

5. All sense organs are subject to corresponding sensations.

6. We find in certain peculiar states of the brain, in that of anæmia which produces normal sleep, in that of physical alteration which paralyzes a certain number of our intellectual faculties, the condition characterized by dreams, somnambulism, and hysteria.

7. Hallucinations can be produced in the healthy man by exciting the imagination, securing the attention, or by persuading imaginary sensations.

8. The very fact that our organs of sense are liable to error should render us very careful in estimating their evidence.

9. Provoked hallucinations are obtained with great facility in persons plunged in pathological sleep in consequence of certain procedures or of a special neurotic state.

10. The pathological sleep is preceded or accompanied by such modifications of innervation as lead to catalepsy, hyper-excitability of nerves and muscles, anæsthesia, hyperæsthesia, etc.

11. It is produced in persons who are predisposed thereto by certain procedures known as magnetic passes, hypnotism, physical impressions, such as music, thunder, loud noise, brilliant light, certain perfumes, etc., or by moral impressions, great fright, disappointment, great joy, etc.

12. The phenomena which accompany the condition should be severely criticized in order to detect those due to deception, etc.

13. In the actual state of our positive consciousness it is not necessary in order to explain the so-called magnetic phenomena, to have resource, with Mesmer and his followers, to the hypothesis of a fluid endowed with marvellous properties.

14. The essential cause of these phenomena does not reside in the magnetizer but in the magnetized and in a neurotic state peculiar to the latter.

15. Positive science cannot deny the possible existence in the universe of entirely unknown forces, but it can only speculate as to those which have been duly demonstrated. Without doubt the extent of the unknown is immense, and we should aspire to new conquests by serious and methodic work, eliminating all error due to a diseased imagination or to new scientific interests.—*Rev. Internat. des Sci. Biol.*, July 15, 1882.

The Movements of the Iris and their Mechanism.

As the results of forty-nine experiments on dogs, cats, goats, and more especially white rabbits, the author, M. Moriggia, comes to the following conclusions, which are recorded in *Moleschott's Unters. zur Naturl.*, etc., xiii., 1, p. 1: In animals which have been kept for several weeks in the dark, the pupil generally dilates more widely in the dark, and contracts more completely in the light, than in those which have been kept in the ordinary conditions as regards light and darkness. Under the same conditions the mydriatics and myotics act much more promptly. The pupil, when dilated (though not to its fullest extent) by atropin, does not contract in response to light. If a concentrated solution of atropin be dropped into one eye, in goats and rabbits, it has little or no effect on the pupil of the other eye; in albino rabbits, however, it acts very powerfully on the other eye. Even when the pupil is dilated as widely as possible this condition yields at once when the superior cervical ganglion of the sympathetic is extirpated. On stimulating the uninjured cervical sympathetic by means of an induced current, the pupil is widely dilated. The mydriatic action of atropin is less marked on the side from which the superior cervical ganglion has been removed,